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Published:
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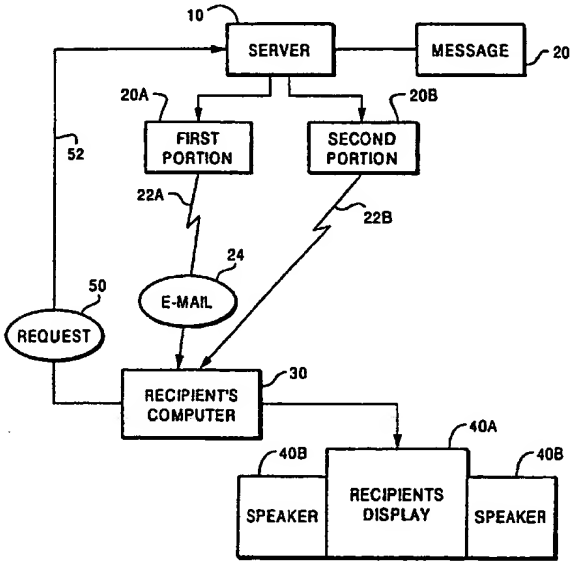
(54) Title: STREAMING USING MULTIPLE DATA FILES



(57) Abstract: A logically contiguous piece of information is streamed over an electronic network by splitting the piece of information into at least a first file (20 A) and a second file (20 B); transmitting the first file (20 A) over the network to a recipient (30), along with a player that plays the file; detecting when the recipient (30) plays the first file (20 A); and transmitting the second file (20 B) over the network while the recipient (30) is playing the first file (20 A). Preferred systems and methods use a custom player rather than a standard commercial player such as RealPlayer™. The streamed information preferably comprises digital video or digital audio, and is sent over the Internet, or more preferably over the World Wide Web.

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STREAMING USING MULTIPLE DATA FILES

Field of The Invention

The field of the invention is electronic direct marketing.

Background of The Invention

Streaming is presently a popular method of transmitting video over a wide area network such as the Internet. One problem, however, is that display of the streamed information cannot realistically begin until a threshold amount of information has been received at the displaying computer. If display is begun too early, the display of the received information will conclude before sufficient additional information has been downloaded to continue display. The problem often continues even after display has begun, as additional information is downloaded. If the additional information is downloaded too slowly, the display is choppy, or even stalled.

The problem has been addressed in various ways, chiefly by improving compression and decompression algorithms, by increasing incoming bandwidth. But these tend to be long term solutions, and leave many users frustrated with streamed messages in the short term. It is also known to download an entire streamed file on a non-synchronous basis, such as using e-mail during off hours. Unfortunately, that technique is undesirable because it tends to utilize enormous amounts of disk space for messages that the recipient may never even display, and may involve files that are too large to penetrate many firewalls. All of these problems can be quite significant for the electronic direct mail industry, which often desires to provide recipients with relatively large streamed messages.

Thus, there is a continuing need to improve streaming to balance the amount of information downloaded against the desire to display streamed messages without undue delays or choppiness.

Summary of the Invention

The present invention provides systems and methods of buffering the streaming of a logically contiguous piece of information over an electronic network, comprising: splitting the piece of information into at least a first file and a second file; transmitting the first file over the network to a recipient, along with a player that plays the file; detecting when the recipient plays

the first file; and transmitting the second file over the network while the recipient is playing the first file.

Preferred systems and methods use a custom player rather than a standard commercial player such as RealPlayer™, and more preferably a player that is proprietary to the company transmitting the piece of information. The streamed information preferably comprises digital video or digital audio, and is sent over the Internet, or more preferably over the World Wide Web.

Various objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of preferred embodiments of the invention, along with the accompanying drawings in which like numerals represent like components.

Brief Description of the Drawing

Fig. 1 is a schematic of a streaming message being split into multiple files, and played according to the claimed subject matter.

Fig. 2 is a schematic of a preferred method according to the present invention.

Detailed Description

In Figure 1 a server 10 splits a message 20 into a first portion 20A and a second portion 20B. The server 10 sends the first portion 20A as part of an e-mail 24 along path 22A to a recipient's computer 30. When the recipient (not shown) opens the e-mail 24, he invokes a streaming player (not shown) to begin playing the first portion 20A on his display 40A and/or speakers 40B. When the e-mail is opened, the recipient's computer 30 sends a request 50 along path 52 to the server 10, which then sends the second portion 20B to the recipient's computer 30 for playing. In that manner, the transmission of message 20 can be thought of as being buffered, with buffered data included in the first file.

Server 10 is contemplated to be any computer of adequate capability. Server 10 thus need not be dedicated to the described tasks, and need not even be directly connected to the Internet or other network. Moreover, server 10 can be replaced by a plurality of computers. Thus, the task of splitting the message 20 into first and second portions 20A, 20B can be

performed by one computer, the task of sending the first portion 20A as part of an e-mail 24 can be performed by a second computer, the task of receiving the request 50 can be performed by a third computer, and the task of sending the second portion 20B can be performed by a fourth computer. Server 10 may physically or logically contain message 20, and message portions 20A, 20B, or may simply have pointers to one or more of these items being stored elsewhere.

The message 20 preferably includes an advertisement (i.e., a commercial). The terms "advertisement" and "commercial" are used herein in a very broad sense to mean any message intending to motivate a recipient to take an action favorable to an advertiser. Commercials may be simple textual banner ads, but more preferably include rich-media graphics such as animation, a photograph or other image, or an audio tract. Still more preferred commercials include video and branding graphics. Especially preferred commercials will be those that communicate a value proposition communicated in 30 seconds or less. Currently the most preferred commercials include an audio tract, a video tract, branding graphics, and hyperlinks, all delivered in a single executable file. These and other embodiments are as described in PCT application serial no. PCT/US99/29639 filed December 13, 1999 and U.S. Provisional application serial no. 60/159049 filed October 12, 1999, respectively which are incorporated herein by reference. Still other preferred embodiments include "slide-show" commercials as described in PCT application serial no. PCT/US99/23822 filed October 12, 1999, which is incorporated herein by reference.

Message 20 may advantageously include a branding graphic, which may be a logo, trademark, trade name, slogan, or other indicia of origin of a product or service that is presented graphically, i.e. as something other than pure text. The familiar Mercedes™ symbol, for example, is a branding graphic, as are the e-bay™ logo and General Electric's GE™ logo. It is contemplated that many messages will be directed to a single advertiser, and therefore may have only a single branding graphic.

The term "advertisers" is used herein in the broadest possible sense, including any entity trying to impact the behavior of people. In many instances the desired impact will include motivating the recipient to purchase goods or services. In other instances the desired impact may be to cause the recipient to vote in a given manner in an election, or a poll. In still other instances the desired impact may be of a very general nature, perhaps increasing societal awareness of alcoholism.

Messages 20 can be co-sponsored by more than one advertiser. The term "co-sponsor" is used herein to mean that at least two different advertisers have included information identifying themselves or one or more of their brands in a given commercial. The identifying information may be a name such as Coca-Cola™ or Home Depot™, a design such as the Nike™ swoosh, or any other trademark or trade name. Particularly contemplated identifying information includes graphical images relating to the advertiser's name, products, or services, known in the field as branding graphics. Details of methods and systems involving co-sponsored ecommercials are described in PCT application serial no. PCT/US99/22952 titled "Custodial Database for On-Line Marketing", filed October 12, 1999, which is incorporated herein by reference. Whether from the same advertiser or different advertisers, a given commercial may advantageously have anywhere between one and five branding graphics on a single page, and even higher numbers of branding graphics are also contemplated

E-mail 24 preferably includes the message 20 as part of, or coupled with an executable file (not shown). The term "executable file" is used herein to mean a file that is directly interpreted or executed by the operating system of a computer as opposed to being "played" by player software.

E-mail 24 may also advantageously include tracking software that facilitates tracking of a recipient's responses to the message 20. The tracking software preferably interacts with the recipient's computer 30 to upload data relating to the recipient's responses to (i.e., the tracking information) from the recipient's computer 30 to the server 10, or other computer.

The tracking information can be as simplistic as whether or not the e-mail containing the commercial was ever received by the recipient, and if so, when it was opened. More sophisticated tracking data may include file opening time, video start and stop times, cursor positioning, and forwarding of the commercial to others. Such information may advantageously be stored in the "cookies" section, or preferably in the registry of the recipient's computer. The recipient may also use the commercial to click-through to one or more web sites using link icons 140, and such click-throughs are also preferably tracked. It is especially contemplated that at least one of the web sites accessed by a click-through tracks at least some recipient activities, and even more preferably also contains a video component and an audio component that may or may not be the same as that included in the commercial. Suitable methods and systems directed to

tracking are described in the PCT application serial no. PCT/US99/29639 titled "Methods and Systems for Tracking Electronic Commercials", filed December 13, 1999, which is incorporated herein by reference.

Using currently known compression techniques it is possible to store a 30 second clip in about 500 kB of memory. Other video clip lengths are also contemplated, from only a few seconds to a minute or more. Multiple video clips may also be included within a single commercial.

An audio clip typically plays concurrently with a corresponding video clip. All manner of audio clips are contemplated, including voice, music, nature sounds, and so forth. Almost any message 20 can include one or more audio clips, even if they are merely used as background.

E-mail 24 may be authenticated, transmitted, as for example with a Verisign™ digital signature. This is important because many firewalls are configured to filter out messages that are not authenticated. Not all commercials need to be authenticated, however, and it may be that in a given e-mailing, a majority of e-mails will not be authenticated due to the substantial overhead costs required. The authentication decision can be made on a campaign by campaign basis, but is preferably made on an individual basis, possibly relying on data stored in a prospects database (not shown) or in a tracking subsystem (not shown).

E-mail 24 is preferably distributed by a high volume electronic mailing company, which sends out perhaps hundreds of thousands or even millions of messages per month. An exemplary such company is eCommercial.com, Inc. based in Southern California, USA. The distributor may or may not host its own servers. E-mail 24 is preferably transmitted over the Internet, but can be transmitted over any suitable network, including local area networks, wide area networks, public networks, private networks, and so on. Because of the high traffic involved, the distributor may advantageously employ outbound trafficking technologies such as those described in PCT application serial no. PCT/US99/22948 titled "Load Balancing Via Message Source Selection", filed October 12, 1999, U.S. Provisional application serial nos. 60/158926 titled "Message Content Based Routing", 60/158925 titled "Dynamic Routing via Shortest Delivery Time", 60/158993 titled "Historical Delivery Time Based Routing Tables", all filed October 12, 1999, and concurrently filed PCT application titled "Outgoing Message Load Balancing", respectively, each of which is incorporated herein by reference.

The step of detecting when the recipient plays the first file can be accomplished by the player software (not shown), or by some other software that may or may not be downloaded to the recipient's computer as part of the e-mail 24. The detecting preferably takes place when the recipient first executes the appropriate player on the recipient's computer 50.

In **Figure 2**, a preferred method 200 of buffering the streaming of a logically contiguous piece of information over an electronic network, comprises: splitting the piece of information into at least a first file and a second file 210; transmitting the first file over the network to a recipient, along with a player that plays the file 220; detecting when the recipient plays the first file 230; and transmitting the second file over the network while the recipient is playing the first file 240.

Thus, specific embodiments and applications of executable electronic commercials have been disclosed. It should be apparent, however, to those skilled in the art that many more modifications besides those already described are possible without departing from the inventive concepts herein. The inventive subject matter, therefore, is not to be restricted except in the spirit of the appended claims. Moreover, in interpreting both the specification and the claims, all terms should be interpreted in the broadest possible manner consistent with the context. In particular, the terms "comprises" and "comprising" should be interpreted as referring to elements, components, or steps in a non-exclusive manner, indicating that the referenced elements, components, or steps may be present, or utilized, or combined with other elements, components, or steps that are not expressly referenced.

CLAIMS

What is claimed is:

1. A method of buffering the streaming of a logically contiguous piece of information over an electronic network, comprising:
splitting the piece of information into at least a first file and a second file;
transmitting the first file over the network to a recipient, along with a player that plays the file;
detecting when the recipient plays the first file; and
transmitting the second file over the network while the recipient is playing the first file.

2. The method of claim 1 wherein the player is proprietary to a company transmitting the piece of information.

3. The method of claim 1 wherein the electronic network comprises the World Wide Web.

4. The method of claim 1 wherein the piece of information comprises a commercial message.

5. The method of claim 1 wherein the piece of information comprises digital video.

6. The method of claim 1 wherein the piece of information comprises digital audio.

7. The method of claim 1 wherein the step of detecting comprises the user executing the player on a client computer, and the computer sending a message to a server.

8. The method of claim 1 wherein the step of detecting comprises the user executing the player on a client computer, and the computer sending a message to a server, the message initiated upon the recipient playing the first file.

9. The method of claim 1 wherein the step of detecting comprises a server computer transmitting the first file to the recipient following receipt of a request from a client computer.

AMENDED CLAIMS

[received by the International Bureau on 13 September 2000 (13.09.00);
original claim 1 amended; remaining claims unchanged (1 page)]

1. A method of buffering the streaming of a logically contiguous piece of information over an electronic network, comprising:

splitting the piece of information into at least a first file and a second file;

transmitting the first file over the network to a recipient, along with a player that plays the file;

detecting when the recipient plays the first file;

waiting to transmit the second file over the network until the recipient has completed receiving, and is playing the first file; and

transmitting the second file over the network while the recipient is playing the first file such that the entire piece of information can be viewed by the recipient as a continuous sequence of first and second files.

2. The method of claim 1 wherein the player is proprietary to a company transmitting the piece of information.

3. The method of claim 1 wherein the electronic network comprises the World Wide Web.

4. The method of claim 1 wherein the piece of information comprises a commercial message.

5. The method of claim 1 wherein the piece of information comprises digital video.

6. The method of claim 1 wherein the piece of information comprises digital audio.

7. The method of claim 1 wherein the step of detecting comprises the user executing the player on a client computer, and the computer sending a message to a server.

8. The method of claim 1 wherein the step of detecting comprises the user executing the player on a client computer, and the computer sending a message to a server, the message initiated upon the recipient playing the first file.

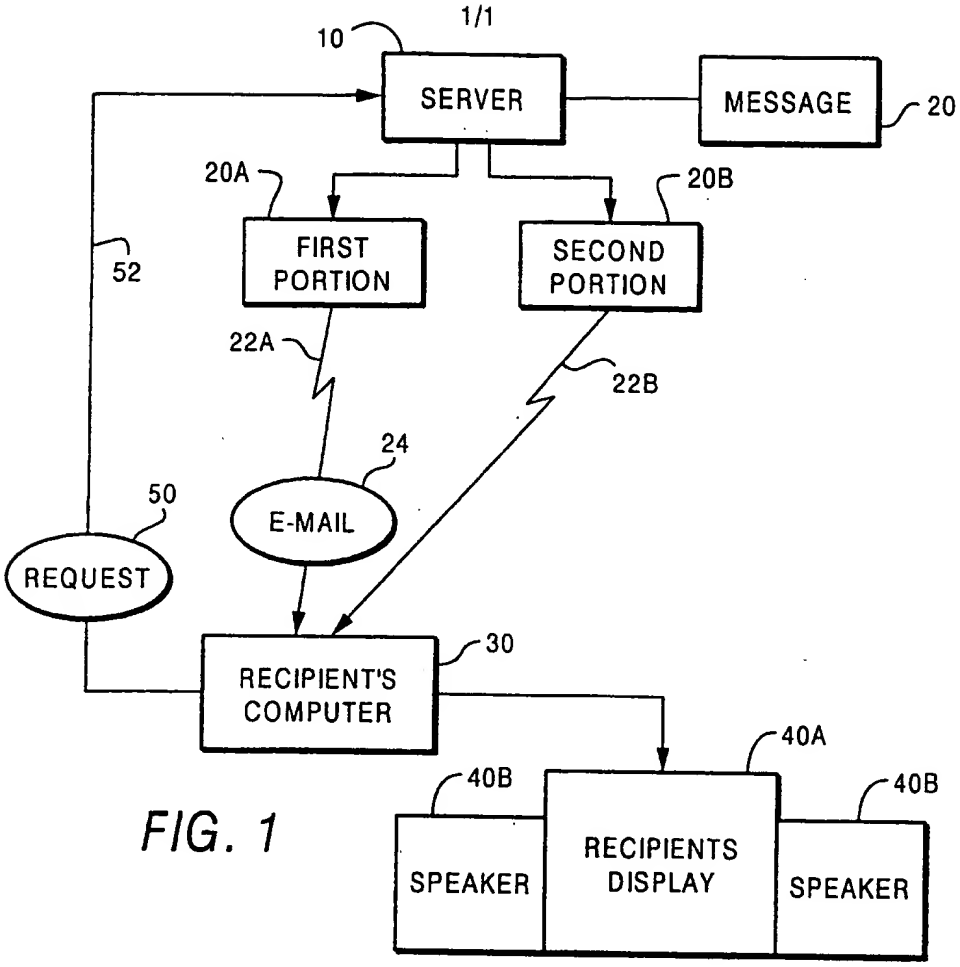
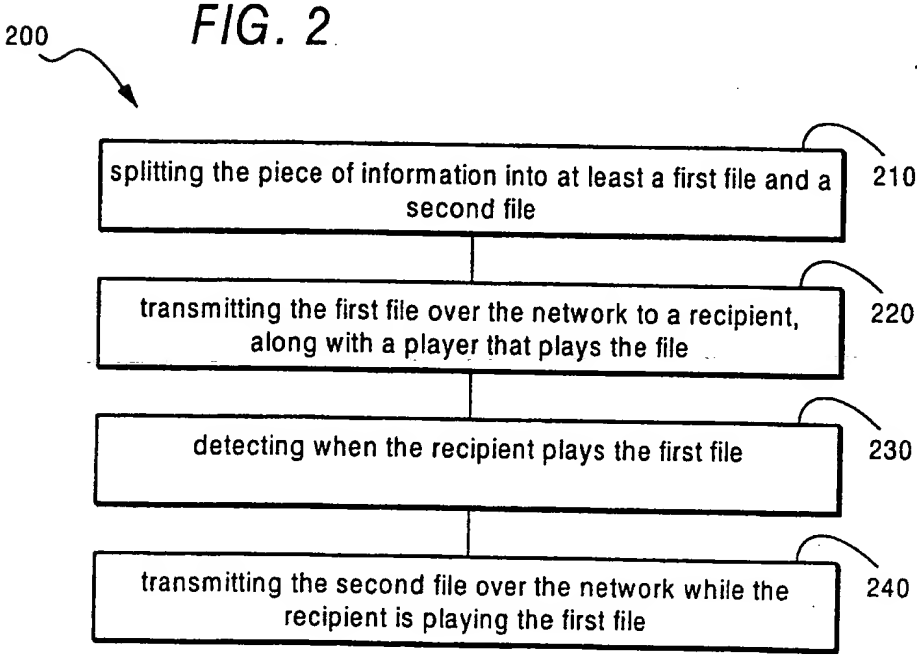

10
SERVER
MESSAGE
20
20A
20B
FIRST PORTION
SECOND PORTION
52
22A
22B
24
50
E-MAIL
REQUEST
30
RECIPIENT'S COMPUTER
40A
40B
40B
SPEAKER
RECIPIENTS DISPLAY
SPEAKER

FIG. 1

FIG. 2


200
splitting the piece of information into at least a first file and a second file
210
transmitting the first file over the network to a recipient, along with a player that plays the file
220
detecting when the recipient plays the first file
230
transmitting the second file over the network while the recipient is playing the first file
240

INTERNATIONAL SEARCH REPORT

Inte. ational application No.
PCT/US00/07926

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 17/60
US CL : 705/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 705/14, 10, 26, 27, 1; 709/231, 232, 219, 234, 247

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
East, Proquest Direct, Corporate Resource Net

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,913,040 A (RAKAVY et al) 15 JUNE 1999 (15.06.1999) See entire document	1-9
Y	US 5,724,424 A (GIFFORD) 03 March 1998 (03.03.1998) See Abstract, Col. 3, lines 14-60; Col. 5, lines 1-17 and 60-67	1-9
Y	US 5,974,451 A (SIMMONS) 26 October 1999 (26.10.1999) See Col. 3 line 18-Col. 4 line 25; Col. 6, lines 1-10, 18-21 and 40-51	3-6
Y	US 6,009,410 A (LEMOLE et al) 28 December 1999 (28.12.1999) See Abstract; Col. 1, lines 30-40; Col. 2, lines 15-35; Col. 4, lines 25-35	1, 3-9
Y	US 6,014,706 A (CANNON et al) 11 January 2000 (11.01.2000) See Col. 2, lines 20-25 and 35-45; Col. 4, lines 20-25	1
Y	US 5,737,495 A (ADAMS et al) 07 April 1998 (07.04.1998) See entire document	1
A	US 5,999,985 A (SEBESTYEN) 07 December 1999 (07.12.1999) See entire document	1-9
A	Business Wire, "Activate.Net and AdForce Form Strategic Alliance; Leading Companies Team to Deliver Next Generation Web Advertising", Business Wire, Corporate Resource Net, 20 March 2000	1-9
A	Business Wire, "Madge.Web and Engage to Offer Next Generation Streamed Advertising Service", Business Wire, Corporate Resource Net, 02 March 2000	1-9

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
31 May 2000 (31.05.2000)	10 JUL 2000
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Emanuel T Voeltz Telephone No. (703) 305-9700 James R. Matthews

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

Inte. ..ational application No.
PCT/US00/07926

C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Tedesco, Richard, "CoolCast Carves Video Niche", Broadcasting & Cable, Vol. 130, Issue 11, pg. 80, 13 March 2000	1-9